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TOWARDS AN ELK MANAGEMENT PLAN FOR THE SPRUCE WOODS-SHILO AREA (G. H. A. 30) IN SOUTH-CENTRAL MANITOBA

Manitoba
Natural Resources

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TOWARDS AN ELK MANAGEMENT PLAN

FOR THE

SPRUCE WOODS - SHILO AREA (G.H.A. 30)

IN SOUTH-CENTRAL MANITOBA

Department of Natural Resources

Wildlife Branch, Parks Branch

April 1988

Towards an Elk Management Plan
For The
Spruce Woods - Shilo Area (G.H.A. 30)
In South-Central Manitoba

This document presents guidelines for management of the elk herd in the Spruce Woods-Shilo area (G.H.A. 30). These guidelines are intended to ensure the survival of elk in this area, reduce user conflicts and enhance recreational opportunities. Major topics discussed include hunting opportunities, viewing, depredation, population monitoring, enforcement and communications. A conservative approach is taken to protect the elk herd from excessive harvest.

This plan may be reviewed annually, or more frequently, as determined by the Directors of Wildlife, Parks, and Regional Services.

Approved:

Arthur Hoole	C. Gordon Prouse	Harvey Boyle
Director of Wildlife	Director of Parks	Director of Regional Services

Date: June 17, 1988

TABLE OF CONTENTS

LIST OF FIGURES v

LIST OF TABLES vi

INTRODUCTION 1

BACKGROUND INFORMATION 2
- A. Overview of Study Area 2
  - 1. Land Tenure 2
- B. The Elk Population 6
  - 1. Historical Perspective 6
  - 2. Herd Status/Biology 6
  - 3. Range Expansion 10
  - 4. Habitat 10
- C. Consumptive Use 11
  - 1. Hunting Seasons 11
  - 2. Hunting by Treaty Indians 13
- D. Non-consumptive Use 13
  - 1. Spruce Woods Provincial Park Recreational Facilities and Visitor Use 13
  - 2. Tourism Potential 14
  - 3. User Conflicts 17
  - 4. Management Projects 18
  - 5. Interpretive Programming 18
- E. Depredation 20
- F. Enforcement and Communications 20

OBJECTIVES 23
- A. The Elk Herd 23
- B. Elk Management 23
  - 1. Consumptive Use 23
  - 2. Non-consumptive Use 23
  - 3. Depredation 24
  - 4. Population Dynamics 24
  - 5. Enforcement and Communications 24

MANAGEMENT GUIDELINES 25
- A. Consumptive Use 25
  - 1. Hunting Seasons 25
  - 2. Hunting by Treaty Indians 26
- B. Non-consumptive Use 27
  - 1. Interpretive-Education Program 27
  - 2. Wildlife Refuge 28
  - 3. Viewing Opportunities 29
- C. The Elk Population 29
  - 1. Monitoring 29
  - 2. Habitat 32
  - 3. Biological Investigations 33
- D. Landowner/Elk Conflict 34
  - 1. Depredation 34
- E. Enforcement and Communications 35
  - 1. Implementation 35

MANAGEMENT STRATEGY 37
A. Implementation Priorities 37

LITERATURE CITED 40

APPENDIX I. Photo Record 41

LIST OF FIGURES

1. Land-ownership in G.H.A. 30 3

2. Epinette Creek Hiking and Cross-country Ski Trail System . . . 15

3. Wildlife Management Fields 19

4. Proposed Boundary of Epinette Creek Wildlife Refuge 30

5. Epinette Creek Wildlife Refuge Concept 31

LIST OF TABLES

1. Aerial Elk Surveys, G.H.A. 30 8

2. Aerial Elk Sex/Age Classification Surveys, G.H.A. 30 9

3. Elk Harvest Data for G.H.A. 30, 1978-1986 12

4. Epinette Creek Trail Bookings (Number of Overnight Users) . . . 16

5. Compensation Claims G.H.A. 30, 1980-81 to 1986-87 21

6. Priorities for Elk Management Strategy in G.H.A. 30 38

INTRODUCTION

This document reviews the history of the elk population in the Spruce Woods-Shilo area and identifies several key management concerns. It sets forth guidelines for future management of this population to ensure high-quality viewing and interpretation opportunities, excellent sport hunting opportunities, and provisions for subsistence needs. Through implementation of these guidelines, Manitobans will derive greater recreational benefits from this population, while concerns of local farmers related to crop depredation will be addressed.

The Spruce Woods-Shilo area, included in Game Hunting Area (G.H.A.) 30, encompasses the ancient delta of the Assiniboine River, formed when glacial Lake Agassiz covered most of southern Manitoba. When the lake drained away the delta was left exposed and barren, with winds reshaping the sandy deltaic deposits into dunes. Eventually vegetation covered most of these dunes, though areas like the Spirit Sands remained exposed. Prairie grasses and forbs were most suited to this landscape, but white spruce and aspen became common as well.

With the advent of settlement, farmers and ranchers took up homesteads in the area. The rich bottomlands along the Assiniboine River proved productive, as did lands on the periphery of the ancient delta. The heart of the delta, however, was recognized as having poor potential for agriculture, but offering some value as a forest reserve. A large tract of Crown land was set aside as a forest reserve, much of which is now Canadian Forces Base (C.F.B.) Shilo with the balance set aside in Spruce Woods Provincial Park. Other Crown land also exists in this area, acquired or set aside for a variety of purposes. It is the considerable amount of public land remaining in a relatively natural state in the area that has allowed an elk population to reappear and eventually thrive following their virtual disappearance in the late 1800's.

The management of Crown lands in the area is complicated by the number of different levels of government and agencies involved. As the management of these lands is critical to the survival of the elk population, it is important to recognize the variety of purposes for which these lands were set aside.

BACKGROUND INFORMATION

A. Overview of Study Area

The elk management strategy is developed for G.H.A. 30, one of many management units the Department of Natural Resources uses to delineate geographical areas for the purpose of setting game hunting seasons. G.H.A. 30, a mixture of Crown and private land holdings, encompasses much of the sandhill terrain in south-central Manitoba. Various federal and provincial agencies are responsible for managing land within the study area. The game hunting area is approximately 5775.7 km^2 (2230 $mi.^2$) in size (Figure 1).

The most important areas within G.H.A. 30 for the elk population are Spruce Woods Provincial Park, the adjacent Canadian Forces Base Shilo and associated environs. Studies by Hornbeck (1979), Strong (1981), and Rebizant (in press), plus annual aerial surveys have indicated that these areas encompass the prime winter and summer ranges used by all sex and age components of the population. Other lands within G.H.A. 30 may or may not be used by elk, dependent on the overall population status, proximity to agricultural crops, existing land use or habitat type.

1. Land Tenure

a. Canadian Forces Base Shilo

The Department of National Defence leases approximately 362.6 km^2 (140 $mi.^2$) of Crown land from the province for military training purposes. The majority of this area has sandy soils, with permanent grass, tree or shrub cover. The Epinette Creek drainage on the northern limits of the area is boggy with peaty soils and a varied tree cover that includes black spruce, tamarack, willow, trembling aspen and balsam poplar. The terrain is characterized by steep rugged stablilized dunes. Repeated fires over the years have reduced the amount of tree cover in the central part of the Shilo ranges. Military training at Shilo has taken place since the 1930's when the land was first leased from the province as a training area.

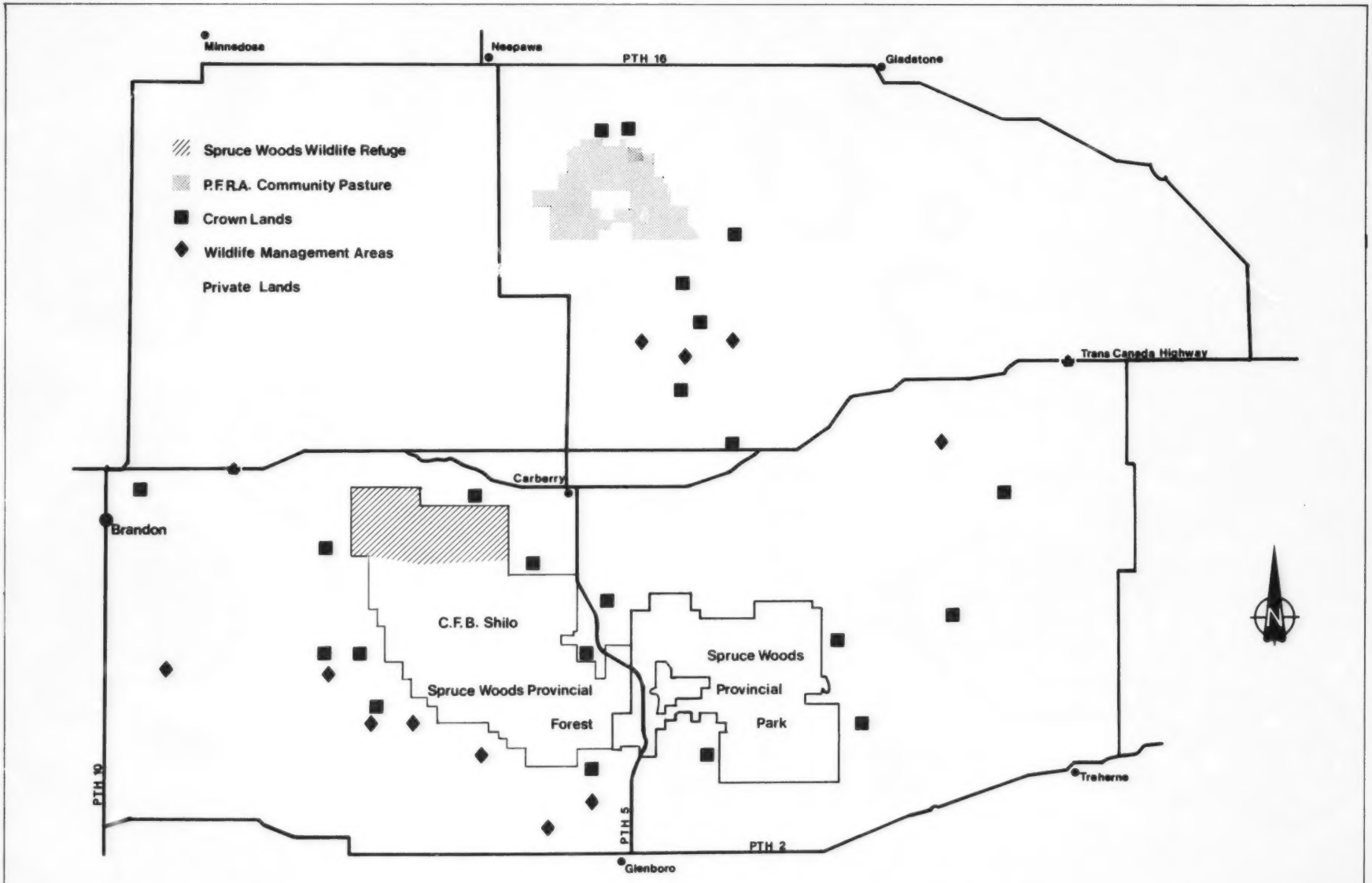


Figure 1 Land Ownership in G.H.A. 30

b. Spruce Woods Provincial Park

Spruce Woods Provincial Park was established in 1965, largely from existing Crown land in the Spruce Woods Forest Reserve, although some private land was also purchased.

The park encompasses 238.3 km^2 (92 $mi.^2$) and is bisected by the Assiniboine River. The terrain is less rugged than C.F.B. Shilo and has more tree cover consisting of mixed wood forests of spruce, pine plantations and poplar. Soils are sandy, except in the river valley where heavy clay loams are found. Agriculture has been phased out of most of the park, except for annual hay permits on former fields in the valley bottom, and limited cattle grazing leases in the North Block. The intensive recreational developments in the park are located adjacent to P.T.H. 5 and the Assiniboine River.

c. Spruce Woods Forest Reserve

The Forest Reserve boundaries encompass all of C.F.B. Shilo and Spruce Woods Provincial Park, plus an additional 64.8 km^2 (25 $mi.^2$) of land north of Epinette Creek in the Camp Hughes area and a small plantation of approximately 8 km^2 (3 $mi.^2$) north of the junction of Provincial Trunk Highway 1 and Provincial Road 350. The Forest Reserve dates back to 1895 when it was first established as a Federal Timber Reserve.

d. Spruce Woods Wildlife Refuge

The Spruce Woods Wildlife Refuge lies north of C.F.B. Shilo and the Canadian National Railway and encompasses 85.5 km^2 (33 $mi.^2$) of Crown land, all of which lie within the northern limits of the Forest Reserve. First declared in 1911 and including much more land than the current refuge, this refuge was altered by successive regulations until it reached its present size in 1966. A portion of the refuge, south of Epinette Creek, lies within the Shilo Military Reserve. Much of the land within the refuge is within the Epinette Creek drainage and is swamp and bog with dense black spruce, tamarack, balsam poplar and willow. In the northern part of the refuge, the wetter, peatier soils give way to sandhills with a mixed cover of jackpine plantations, white spruce, and trembling aspen. The earliest plantation was established in

1902 by the Federal Forest Service. Habitat within the refuge is better suited to moose than to elk which prefer more open grassland environments.

e. Wildlife Management Areas (W.M.A.'s)

At the present time there are three W.M.A.'s in G.H.A. 30, encompassing approximately 67.3 km^2 (26 $mi.^2$). Most of these lie outside of the immediate Spruce Woods-Shilo area. The Brandon Hills W.M.A. is the smallest with 7.8 km^2 (3 $mi.^2$) in the Brandon Hills south of Brandon. The Assiniboine Corridor W.M.A. is a series of parcels on the Assiniboine River near Shilo, encompassing approximately 20.7 km^2 (8 $mi.^2$). Five units of the Whitemud Watershed W.M.A. add another 38.9 km^2 (15 $mi.^2$). These W.M.A.'s are treed lands of low agricultural capability and generally rough terrain. Along the Assiniboine Corridor W.M.A., parts of 14 separate quarter sections, comprising 176.92 hectares (437 acres) have renewable hay permits. In the same area, parts of eight quarters, or 142.51 hectares (352 acres) are under cash rental lease for annual cropping and 129.55 hectares (320 acres) are under forage (grazing) lease. In the Edrans Unit of the Whitemud W.M.A., 17 quarter sections are under long-term forage lease to eight farmers.

f. Unencumbered (Non-designated) Crown Lands

The majority of unencumbered Crown lands fall in the sandhill terrain near Shilo, the park, east of P.T.H. 34, or north of P.T.H. 1 on the Arden Ridge. Most of the parcels are under long-term lease for grazing to area farmers. An estimated 181.3 km^2 (70 $mi.^2$) of unencumbered Crown lands occur in G.H.A. 30.

g. Prairie Farm Rehabilitation Administration Community Pasture

The P.F.R.A. Lansdowne Community Pasture, south of Neepawa on the Arden Ridge, is approximately 67.3 km^2 (26 $mi.^2$) of rough, rolling sandhills terrain. Most, if not all, of this land is leased to the federal government by the province.

h. Private Land

The majority of land within G.H.A. 30 is privately owned and is used for agricultural purposes - haying, cropping or grazing. Most, but not all, private land coincides with the better soils and flatter topography in the area.

Elk habitat is not confined solely to the various types of Crown land, but also occurs on privately-owned grassland or forest. Changes in use of private land can and will affect the capacity of G.H.A. 30 to support elk. A major management problem is the recurring depredation and fence damage caused by elk on these private lands.

B. The Elk Population

1. Historical Perspective

Elk were present in the Spruce Woods-Shilo area in the 19th century but declined with increasing settlement of the area. Some elk probably remained in southern Manitoba but were thought to have disappeared from this area in the 1880's (Criddle 1929). A restocking attempt was made in 1917 when seven elk were released from the Winnipeg Zoo. This effort was not successful and elk were supposedly extirpated from this area during the early decades of the 20th century. Elk were again noted on aerial big game surveys in the 1950's and 1960's, but in low numbers. In 1969, 145 elk were counted by Department staff.

It is possible that the current elk herd is a remnant population, or it may be the result of movement to this area by elk from Riding Mountain National Park. Records indicate that elk from the National Park have migrated across country, particularly during periods of high elk populations or during severe winters.

2. Herd Status/Biology

Observations of elk by Department and military staff became more frequent in the early 1970's, suggesting an increase in population. The first count of elk in the Spruce Woods-Shilo area was attempted in 1977 (Hornbeck 1979). In 1978, aerial elk surveys over most or all of C.F.B. Shilo and the park began on a regular basis using military aircraft. Continuity of these surveys during fall and midwinter has

provided a good data base for the elk population in G.H.A. 30. The results of all winter surveys flown are summarized in Table 1.

In addition to midwinter elk counts on the Shilo Ranges and Spruce Woods Provincial Park, sex/age classification surveys were flown each fall over the Shilo Ranges. These are summarized in Table 2. Observations of elk on midwinter aerial surveys have indicated that in general over 80% of all animals observed have been either on or in proximity to C.F.B. Shilo. The remaining elk were seen in Spruce Woods Provincial Park or on adjacent private or Crown lands.

The population increased throughout the 1970's and the early 1980's when the highest number of elk ever recorded were seen during a helicopter survey. Subsequent aerial surveys, however, revealed a decline in the population over the entire area.

The increase in the elk population was probably due to measures intended to end illegal access to the Shilo ranges. Enforcement of trespass laws by military staff was tightened during the 1970's, after intensive training by West Germany began at Shilo. Prior to this intensive use of the ranges, illegal access was common place and excess harvest likely kept the population at a level where it could not increase. With a cessation of this activity, the population was large enough to grow and it rapidly expanded. In 1981, it was estimated that the elk population in the entire Spruce Woods area (G.H.A. 30) was probably about 800 animals.

The decline in the population can be attributed to both legal hunting (licenced and Treaty Indian) and the illegal kill by poachers. Hunting seasons in this area began in 1979 on a limited basis and became less restrictive as surveys indicated a healthy population. Very liberal seasons began in 1982 when peak numbers of elk were observed and damage complaints from area farmers and ranchers increased.

Voluntary check stations were initated when more liberal seasons, particularly for calves and cows, were initiated. Data collection over several years indicates that elk in the Spruce Woods area are healthy. Reproductive information collected indicates a high percentage of adult females were bred (a five-year average <u>in utero</u> pregnancy rate of 83 calves/100 cows) (Bidlake 1980, 1981, 1982; Bidlake and McPhail 1983, 1984; McPhail 1985). The causes for difference

TABLE 1

AERIAL ELK SURVEYS, G.H.A. 30

Date	Total Elk	Cows & Calves	Spike Bulls	Branch Bulls	Total Bulls	Area Flown
Jan./78	412	341	19	52	71	Shilo
Jan./79	568	467	60	41	101	Park and Shilo
March/79	287	260	5	22	27	Shilo
Jan./80	540	449	35	56	91	Park and Shilo
Feb./81	637	550	37	50	87	Park and Shilo
Feb./82	474	424	21	29	50	Park and Shilo
March/83*	191	165	7	19	26	Shilo
Feb./ March/84		CANCELLED - NO SNOW				
Feb./85	289	231	22	36	58	Park and Shilo
Feb./86	303	261	15	27	42	Park and Shilo

Notes:

* Poor snow cover - cancelled after Shilo Ranges flown.

TABLE 2

AERIAL ELK SEX/AGE CLASSIFICATION SURVEYS, G.H.A. 30

Date	Total Elk	No. Cows	No. Calves	No. Spike Bulls	No. Branch Bulls	Bulls	Calves/ 100 cows	Bulls/ 100 cows
Nov./78	234	167	54	12	1	13	32	7.7
Nov./79	328	179	116	26	7	33	65	18.4
Nov./80	317	198	82	19	18	37	41	18.7
Nov./81	200	124	62	7	7	14	50	11.2
Nov./82	280	156	87	19	18	37	56	23.7
Nov./83	209	120	64	16	9	25	53	20.8
Nov./84	183	100	66	11	6	17	66	17
Nov./85	NOT FLOWN - DEPARTMENT OF NATIONAL DEFENCE FIRING EXERCISES							

between *in utero* reproductive rates and age ratios (calves/100 cows) noted on fall sex/age flights when calves are approximately six months of age, is not fully understood. At least some of the newborn calves may be lost to various causes of natural mortality (e.g. accidents and predation).

Preliminary investigations on one suspected cause of mortality in elk, the brainworm, suggest that this parasite has little effect on the elk herd. Sightings or reports of sick or diseased elk have been rare since the population began to increase in the 1970's.

Since 1977, three separate studies dealing with habitat, distribution or seasonal use, and habitat selection by bull elk have been completed (Hornbeck 1979, Strong 1981, Rebizant *in press*). These studies have contributed a great deal of ecological and biological data on the herd.

3. Range Expansion

Although few surveys have been flown over areas outside the park and Shilo, elk observations by staff and the public in other parts of G.H.A. 30 became more frequent in the early 1980's. Elk have been observed on the Arden Ridge in several locations north of P.T.H. 1, from Firdale almost to Neepawa. Elk have been commonly seen south of P.T.H. 2 in the Souris River Bend W.M.A., south of Wawanesa, in the Brandon Hills west of the Assiniboine, and along the Assiniboine River well east of P.T.H. 34 in the Lavenham and Treherne areas. Elk have also been reported in several locations of the Tiger Hills, although their origin is open to speculation. It is quite probable that elk from the population in the Spruce Woods area have moved in many directions. Whether this results from behavioural characteristics or in response to range/habitat conditions is unknown. It is unlikely that the frequent sightings elsewhere are attributable to elk originating from Riding Mountain National Park.

4. Habitat

One of the key factors in the ability of an area to support a big game population is habitat. Three studies of the elk in this area focussed to a large part on the habitat within the area that was selected by elk, both spatially and temporally. Hornbeck (1979)

suggested that habitat in Spruce Woods Provincial Park may be limiting in its ability to support a large number of elk due to the mixed-wood character of the park and surrounding area. Habitat on and adjacent to C.F.B. Shilo seemed to be favoured by elk in spite of military activities. Because of more frequent and larger wildfires on the Shilo training ranges in recent years, there is preliminary evidence to suggest that key elk winter ranges have been destroyed, producing a shift in winter occupancy to more favourable habitat (personal observations of L. Bidlake, M. Shoesmith). The more open aspect of Shilo compared to Spruce Woods Provincial Park suggests that this habitat, in snow-free months, is preferred by elk over the relatively closed forest in the park and adjoining lands, at least by cow/calf aggregations (Strong 1981, Hornbeck 1979). Changes in land use on private land and Crown land leases (e.g. from pasture to crop, clearing of tree cover), has had some influence on elk population size and on the distribution of elk within the area. Intensity of land used for cattle grazing will undoubtedly influence the pattern of elk dispersal and occupancy. None of these changes, particularly on private land, have been monitored and correlations drawn to the impact on the herd or on its seasonal or temporal distribution.

C. Consumptive Use

Consumptive uses for the purposes of this report are defined as wildlife-related activities that involve the harvest of game. These activities may be either recreational or subsistence in nature.

1. Hunting Seasons

Frequent ground observations of elk in the mid-1970's suggested a growing elk herd within the Shilo Ranges and Spruce Woods Provincial Park, however, a hunting season was not introduced until after the first aerial survey was flown in 1978. Only then, with information on the size of the herd, was a season recommended by the Department of Natural Resources. Elk hunting seasons have been held annually since 1979. Landowner and licenced hunter success for each season, as determined by questionnaires and voluntary hunter check stations, are summarized in Table 3.

TABLE 3

ELK HARVEST DATA FOR G.H.A. 30, 1978-1986

Year	Archery	Landowner	Special Firearm	Total	Treaty*** Indian
1978*	--	--	--	--	11
1979**	3	--	49	52	16
1980	3	16	52	71	40
1981	18	12	46	76	21
1982	27	31	78	136	25
1983	24	18	64	106	97
1984	5	24	21	50	24
1985	3	18	4	25	16
1986	6	10	7	23	28
1987	3	5	4	12	14

* No seasons.

** No landowner season.

*** Treaty Indian harvest estimates derived from N.R.O. staff in Carberry and Brandon.

2. Hunting by Treaty Indians

Prior to the first licenced hunting season in 1979, Treaty Indians hunted throughout much of the park, Shilo, and on other Crown and private lands in G.H.A. 30. Conservation officer staff did not record elk or deer kills, but with a relatively low elk population, it is presumed Indian people did not harvest many animals. As the success of licenced hunters became known, the popularity of the archery and special firearm seasons in the Spruce Woods area increased accordingly. Coincident with the known hunter success and the increase in the elk population, the hunting effort and success by Treaty Indian people increased. Residents from the Long Plains, Dakota Tipi, Sandy Bay, Swan Lake, Sioux Valley and Oak Lake bands in southwestern Manitoba are known to have hunted in this area, with people from as far away as Gillam and the Waterhen area making hunting trips to the Spruce Woods area. The yearly estimated kill of elk by Treaty Indians, gained from known and estimated kill figures supplied annually by Natural Resource Officers, is summarized in Table 3.

D. Non-consumptive Use

Non-consumptive uses for the purposes of this report are defined as wildlife-related activities that do not involve the harvest of game. These activities may be educational, informational or viewing related.

1. Spruce Woods Provincial Park Recreational Facilities and Visitor Use

Spruce Woods Provincial Heritage Park represents the natural features of the Assiniboine River Delta. The park is comprised of scenic, undulating terrain unique in Manitoba. The landscape supports a variety of rare and endangered wildlife species as well as a significant elk population.

The park attracts approximately 156,000 visitors annually. A wide range of recreational facilities is currently available and used throughout all seasons of the year. Major facilities include a campground, picnic areas and interpretive center.

Parks Branch has developed an extensive system of hiking and cross-country ski trails (38 km or 23 mi.) in the vicinity of Epinette Creek to satisfy public demand for non-motorized use of backcountry areas (Figure 2). The associated infrastructure includes staging areas, log warming cabins, campsites and potable water supplies. Table 4 presents the numbers of registered overnight users since 1981. The figures for day-use hikers and skiers are considerably higher, as Epinette Creek trail system is the most popular of all routes in the park. Annual day use statistics for the Epinette Creek system are not available, but winter traffic counts during the cross-country ski season indicate that 5,500-6,000 people use the trail in the three-month period from mid-December to mid-March.

User groups have been diverse and range from families to organizations like the Westman Wilderness Club, Manitoba Naturalists, Boy Scouts and Girl Guides, school and church groups. Organized school groups extensively use the Epinette Creek trail system for hiking and nature tours. Visitors to the Mother Earth's Children Camp, located near the Epinette Creek staging area and the Kildonan East Outdoor Education Center, located east of the park, make use of the backcountry trail system on a regular basis in summer and winter. Trail development and recreational facilities in the Spirit Sands interpret the natural landscape and wildlife. A conservation ethic is presented to users through interpretive signing. Visitor-use levels to these features have been increasing steadily from 26,000 in 1985 to 40,000 in 1987.

Informal use of existing park trails throughout the backcountry by equestrian users has steadily increased with a total of 160 riders recorded in 1985. Parks Branch intends to formalize a trail system and promote the park for horseback riding.

2. Tourism Potential

The report The Importance of Wildlife to Canadians (Filion et al 1985) indicates that direct economic benefits from wildlife-related recreational activities by residents of Manitoba amounted to $38 million. Benefits received by those participating in hunting amounted to $24 million while primary non-consumptive use trips totalled $4 million. These figures represent the amount of money spent by

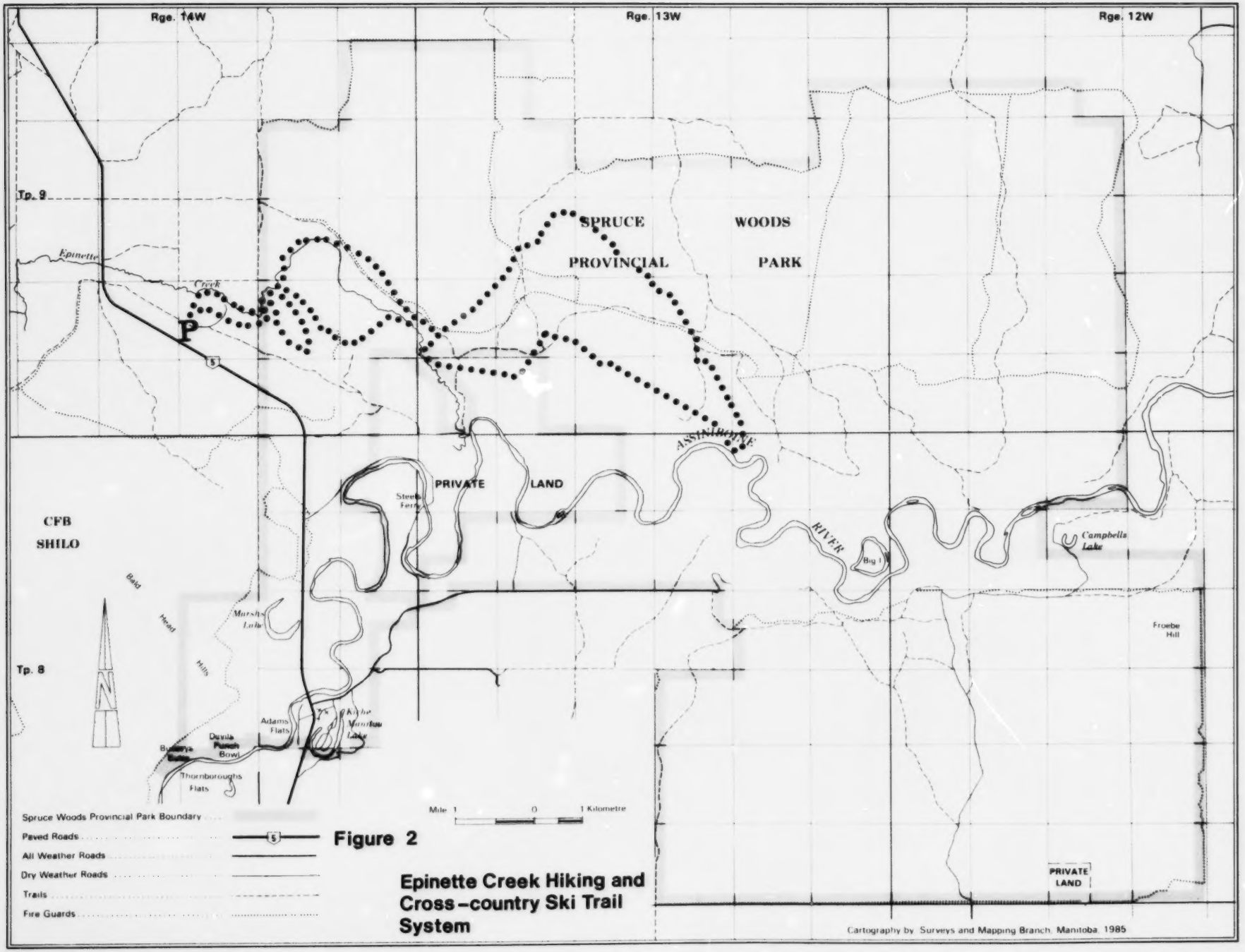


Figure 2

Epinette Creek Hiking and Cross-country Ski Trail System

Cartography by: Surveys and Mapping Branch, Manitoba, 1985

TABLE 4

EPINETTE CREEK TRAIL BOOKINGS (NUMBER OF OVERNIGHT USERS)

Month	1981	1982	1983	1984	1985	1986	1987
January	—	15	170	--	52	48	63
February	--	138	35	--	60	40	64
March	—	48	45	--	69	60	31
April	4	10	38	46	28	2	60
May	151	132	--	43	165	58	76
June	2	57	--	69	89	52	111
July	—	--	--	11	12	68	63
August	--	--	--	17	70	68	26
September	—	4	120	89	94	120	108
October	30*	108	38	120	99	96	49
November	6*	41	52	4	68	60	32
December	--*	80	30	40	91	59	72
TOTALS	193	633	528	439	897	731	755

Notes:

* Only partial statistics available.

Statistics represent persons registering for overnight use. Day-use hikers and skiers are not included in the figures, thus data significantly underestimate actual total use.

participants in wildlife-related recreational activities and the direct benefits they received. Wildlife provides substantial economic benefits to the people who personally use the resources and to the Manitoba economy as a whole. Since wildlife-related activities account for a significant portion of the tourism industry, management of the Spruce Woods elk herd to encourage a compatible mixture of recreational activities would increase visitation to the area and stimulate the local economy.

A Parks Branch and Travel Manitoba (1983) Tourism Development Strategy identified the Assiniboine River Corridor/Spruce Woods Provincial Park as an important destination area in Manitoba. The report recommends the development of a major interpretive/education center in Spruce Woods. When such a center is built, interpretive and educational programs and associated facilities would focus on the ecology of elk in the area.

The proximity of major population centers and transportation corridors to Spruce Woods Provincial Park creates an opportunity to develop specialty market products such as quality, one-of-a-kind education and viewing programs. Spruce Woods has the potential to become well known for its year-round opportunities to view and interpret elk and other wildlife species.

3. User Conflicts

Currently, sport or subsistence hunters and non-consumptive users are not spatially or temporally separated. The absence of efforts to separate various park users has resulted in several conflicts and/or safety concerns. Certain types of recreationists (the backcountry hiker or horseback rider) do not feel comfortable sharing the same portion of the park with big game hunters using rifles. User conflicts and public safety issues, both real and perceived, are significant and require resolution.

A system of designated hunting routes was established in Spruce Woods Provincial Park in 1986 to regulate vehicle use. Reasons for establishing this system included resource and landscape protection, public safety, provision of quality recreational experiences and the desire to avoid user conflicts. The effectiveness of these routes in resolving the existing human and resource management conflicts will be evaluated regularly and modified if necessary.

In order to provide high-quality viewing and interpretive opportunities for elk it will be necessary to restrict interactions between noncompatible user groups. An integrated approach to elk management should consider the need to separate users to provide first class recreational opportunities for visitors pursuing both non-consumptive and consumptive activities.

4. Management Projects

The Spruce Woods Fields Committee was formed in 1979 to define and regulate agricultural field use in the park. The committee identified five fields in the north-central portion of the park to be allocated for wildlife management purposes (Figure 3). The fields were improved and planted with alfalfa in an attempt to attract animals and to reduce depredation occurrences along the periphery of the park. Initial efforts have not attracted large numbers of elk since they seem to prefer specialty crops such as sunflower and corn. A forage species has yet to be found which will lure elk in large numbers.

Park managers have been reluctant to expand lure cropping or to implement other management techniques which would attract elk into confined areas. Concentrating animals in certain areas could increase uncontrolled hunting. If a measure of protection could be given to the elk herd within the park, lure cropping and other techniques to attract animals are viable management practices to alleviate depredation concerns and provide viewing opportunities.

5. Interpretive Programming

To date the majority of the interpretive programs have concentrated on the sand dunes and rare and endangered wildlife species such as the hognose snake and northern prairie skink. In past years, however, Parks Branch staff have co-ordinated a number of interpretive events specifically about elk. Amphitheatre presentations by student researchers and Wildlife Branch staff have been well attended by the public and response to initial programming efforts have been encouraging. The presence of the most southerly elk herd in the Province and their relationship to a unique landscape in Manitoba has largely gone unnoticed. Improved interpretive programming and promotion

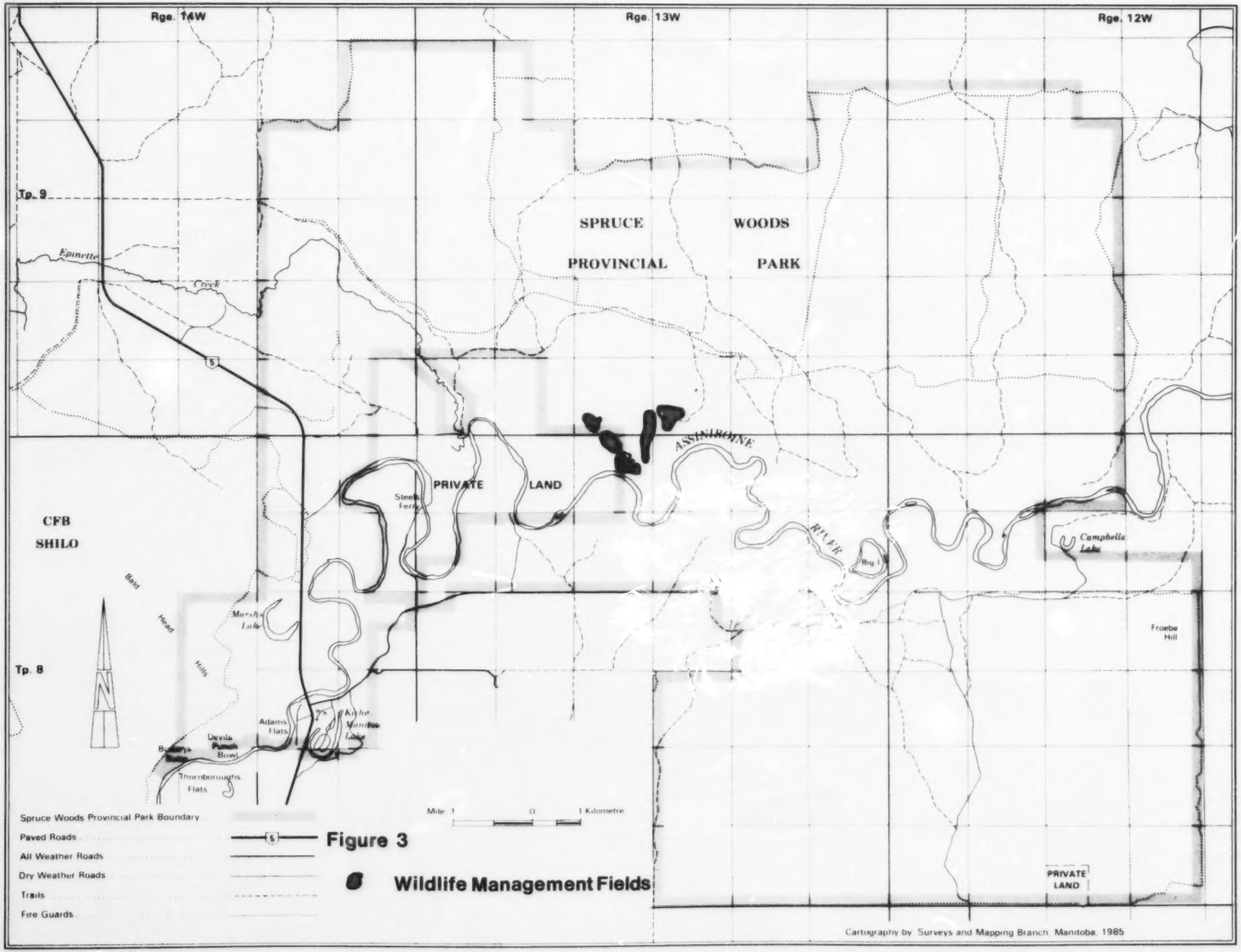

Rge. 14W
Rge. 13W
Rge. 12W
Tp. 9
Tp. 8
SPRUCE WOODS PROVINCIAL PARK
PRIVATE LAND
CFB SHILO
Epinette Creek
Assiniboine River
Steele's Ferry
Bald Head Hills
Marsh Lake
Adams Flats
Devils Punch Bowl
Thornboroughs Flats
Campbells Lake
Froebe Hill
PRIVATE LAND
N
Mile 1 0 1 Kilometre
Spruce Woods Provincial Park Boundary
Paved Roads
All Weather Roads
Dry Weather Roads
Trails
Fire Guards
Wildlife Management Fields
Cartography by Surveys and Mapping Branch, Manitoba, 1985

Figure 3

is necessary to highlight the significance of the elk population. Permanent Parks Branch interpretive staff could develop elk interpretation/education programs using existing facilities and the existing trail network.

E. Depredation

Elk herds in the Shilo-Spruce Woods Provincial Park area cause depredation problems to adjacent landowners by damage to both crops and fences. The depredation issue has escalated with the increased production of specialty crops such as corn and sunflowers which attract elk from Shilo, the park and other Crown lands in the area. The resultant crop damage has affected the livelihood of many farmers and their attitude toward the Department and the elk population.

The Spruce Woods and Area Wildlife and Game Bird Damage Committee, formed in early 1985, and consisting of local landowners, met with the Minister of Natural Resources in June 1985 to discuss their problems. The basic request of the group was to get improvement in the Big Game Damage Prevention Program and for increased payments and benefits paid under the Big Game Crop Damage Compensation Program. Table 5 indicates the number of claims and the compensation payments from 1980-81 to 1986-87. The committee subsequently employed Dr. Richard Rounds of Brandon University to investigate the frequency of elk-related damage and depredation on farm crops. Dr. Rounds' (1987) study findings are presented in his report to the committee: An Analysis of Depredation by Elk and Deer in the Spruce Woods District of Manitoba.

Since 1980, landowners in G.H.A. 30 have been granted a special elk hunting season. The purpose of this noncompetitive season was to encourage landowners to retain wildlife habitat and to satisfy an obligation to landowners for coping with problems caused by elk on their farms. Neither the special seasons nor the partial compensation payments have been satisfactory to the majority of landowners who have had problems caused by elk.

F. Enforcement and Communications

The absence of an approved elk management plan has caused difficulties in co-ordination of various programs undertaken by Parks

TABLE 5

COMPENSATION CLAIMS G.H.A. 30, 1980-81 TO 1986-87

Year	Elk	Deer/Elk	Total	Average
1980-81	$ Ø (0)*	$ Ø (0)	$ Ø (0)	$ -
1981-82	2931 (2)	1013 (3)	3944 (5)	788.80
1982-83	7072 (7)	- (0)	7072 (7)	1010.38
1983-84	- (0)	5491 (2)	5491 (2)	2745.50
1984-85	346 (2)	8881 (10)	9227 (12)	768.91
1985-86	11928 (12)	3173 (8)	15101 (20)	755.05
1986-87	3955 (5)	32820 (9)	36775 (14)	2626.79

* ( ) Number of Claims

Wildlife or Regional Services Branches. The difficulties in communicating management objectives to the public is currently evidenced by local dissatisfaction towards depredation payments and herd size. Without an elk management plan, there has been no effective communications strategy and thus no focus to Department dialogue with the public.

Enforcement is an important management tool which can provide useful management data and minimize illegal harvest. Enforcement of elk poaching is performed by Regional Services without the benefit of elk management objectives, thus reducing the amount of quality management data that are collected. The existing levels of effort for elk enforcement should be reviewed.

OBJECTIVES

A. The Elk Herd

The current herd size is estimated to be in the vicinity of 400-500 animals, although no recent aerial surveys have been flown to verify this estimate. Based on available habitat and depredation problems, an optimum population for this game hunting area is considered to be 500-600 elk. Management efforts will be directed to maintaining the herd at or near this level.

B. Elk Management

An overall objective will be to reduce potential conflicts between different user groups. Moreover, the G.H.A. 30 elk herd and its management is recognized as having significant value for interpretive programming and outdoor education for Manitobans.

1. Consumptive Use
   - i. To maintain annual recreational elk hunting seasons in G.H.A. 30 within Shilo Military Reserve, Spruce Woods Provincial Park and on Crown and private lands. Attempts will be made to provide a diversity of high quality hunting experiences.
   - ii. To liaise with Treaty Indians exercising their hunting rights in G.H.A. 30 to prevent overharvesting of elk and to gain their support for the overall management effort.
   - iii. To monitor annually the total harvest of animals with specific reference to age and sex composition.

2. Non-consumptive Use
   - i. To develop elk interpretive viewing and outdoor education programs in G.H.A. 30 with primary emphasis on Spruce Woods Provincial Park.
   - ii. To establish a wildlife refuge in the park to protect the elk and to enhance opportunities for viewing wildlife.
   - iii. To employ management techniques that will improve viewing and interpretive opportunities in the refuge area.

3. Depredation

   i. To develop a depredation management strategy to minimize conflict between landowners and elk. (Methods to be examined will include landowner incentives, specialty crops, and co-operative field management.)

   ii. To seek the co-operation of landowners, municipalities and other interested persons/groups in working with the Department of Natural Resources to minimize damage done by elk.

4. Population Dynamics

   i. To implement population monitoring to ensure that the Department has useful and current management data.

   ii. To ensure elk habitat is protected and that enhancement actions are initiated which will rejuvenate unproductive habitat.

   iii. To encourage biological investigations of elk in G.H.A. 30, especially those relevant to identified management objectives.

5. Enforcement and Communications

   i. To establish and maintain effective communication with specific groups such as the Shilo Environmental Advisory Committee, Treaty Indian Bands and/or Tribal councils, Rural Municipality councils, Brandon Wilderness Club, Manitoba Naturalists Society, Manitoba Wildlife Federation and affiliates, as well as the general public.

   ii. To assess current levels of enforcement and define appropriate enforcement requirements and approaches to support the foregoing elk management objectives.

   iii. To ensure that elk management objectives receive consideration in future planning projects such as the Spruce Woods Management Plan.

MANAGEMENT GUIDELINES

A. Consumptive Use

1. Hunting Seasons

Annual hunting seasons shall continue in this area dependent on the status of the elk herd and with agreement of Wildlife Branch, Parks Branch and C.F.B. Shilo on annual season proposals. All season proposals will be recommended annually through the Wildlife Branch's established season-setting process, originating from the Regional Biologist(s) with consultation of the Regional Park Planner, and forwarded to the Provincial Elk Manager. Each season proposed will be developed on the basis of population estimates, population distribution, population growth or decline, and projected (estimated) harvest.

Maintenance of hunting seasons for the general public will take precedence over special, noncompetitive seasons for landowners.

a. Guidelines

i. **Primitive weapon hunting seasons have a first priority. In general, primitive weapon hunters have a low rate of success, while these types of seasons provide high recreational use in terms of hunter days.**
Archery hunting seasons will be given first priority, with muzzle loader seasons taking second priority. If primitive weapons can be accommodated annually, the archery and/or muzzle loader seasons will be held in September and October to provide for the maximum variety in recreational hunting experience.

ii. **Rifle seasons have second priority in the season-setting process. The number of tags and licences would be recommended on the basis of herd size and distribution, other seasons agreed to, and anticipated success of rifle hunters.**

iii. **Noncompetitive landowner seasons have third priority in the development of sport hunting seasons and the allocation of elk hunting licences.**

2. Hunting by Treaty Indians

Treaty Indians may exercise their hunting rights on all land to which they have right of access. The park, W.M.A.'s, unencumbered Crown land and a part of the Forest Reserve outside C.F.B. Shilo are open for this type of use at present. Treaty Indians may not hunt in the Spruce Woods Wildlife Refuge or C.F.B. Shilo (unless they have permission of the Base Commander) or on private land to which they have not been given access by the landowner.

The government, through the Department of Natural Resources, recognizes the rights of Treaty Indians to hunt for subsistence use. The Department has a mandate, "to provide for the needs of subsistence users on a priority basis in the management and allocation of wildlife stocks." Thus, provision of elk for Treaty Indians in G.H.A. 30 is a priority but should fit within the overall management strategy developed.

a. Guidelines

i. In order to convey the Department's intention for elk management in G.H.A. 30 to Treaty Indian elk hunters, Wildlife Branch will take the lead role in liaison with major bands who hunt elk in the area. Whenever meetings are arranged with band councils or hunter groups, Parks Branch staff will be part of the team discussing mutual Departmental goals. The principal bands to be contacted will be Long Plains, Sandy Bay, Sioux Valley, Dakota Tipi and Swan Lake. The Dakota-Ojibway Tribal Council will also be contacted.

Treaty Indian hunters will likely continue to be excluded from hunting in C.F.B. Shilo except during a season in which the military reserve is open to licenced hunters. Department of National Defence staff will ask that Treaty Indians who choose to hunt during this time period adhere to all Provincial hunting regulations but the necessity of having a licence/tag will be waived.

ii. Since conservation/education efforts to date on Indian Reserves, specifically for Treaty Indian children, have been virtually nil, it is recommended that Project Wild,

under the leadership of Wildlife Branch, be introduced on those reserves where the elders, teachers or council are receptive to this type of educational instruction.

B. Non-consumptive Use

A System Plan For Manitoba's Provincial Parks (Parks Branch, 1985) states that Spruce Woods Provincial Heritage Park will provide for public appreciation of and viewing opportunities for wildlife, notably elk and deer populations and provide a refuge for these species. A Proposal for Managing the Natural Resources of Manitoba's Provincial Parks (in preparation) indicates that where a wildlife species is present in several parks, the management emphasis for at least one park or population will be placed on non-consumptive use. Spruce Woods represents the best opportunity in the Provincial Park system to develop educational programs focussing on elk life history and habitat requirements.

1. Interpretive-Education Program

The Spruce Woods area has been home to outstanding naturalists such as the Criddle family and Manitoba's first Provincial Naturalist, Ernest Thompson Seton. The uniqueness and diversity of the area attracted these men just as it still attracts thousands of visitors each year.

The natural resource base of Spruce Woods is a prime area for interpretive programming and the resident elk herd will be an important component of the overall interpretive effort. The interpretive and viewing programs will concentrate on the ecological aspects of the elk herd.

a. Guidelines

i. **Parks Branch will develop an elk interpretive program for Spruce Woods Provincial Park with reference to G.H.A. 30 as an entire unit. Information dispersed will have longevity and widespread usage. Topics to be addressed include elk life history, habitat requirements and management programs. Techniques such as slide shows,**

videos, guided hikes and elk-calling in the autumn will be used to encourage safe and enjoyable elk-people encounters.

Wildlife Branch will provide technical expertise as required, i.e. amphitheatre presentation or locating of elk trails.

ii. **Parks Branch will incorporate essential elements of the elk interpretive program into the Spruce Woods Study Kit to increase school group awareness of the elk herd.**

iii. **Parks Branch will continue to promote the presence of a significant elk herd in all park and tourism-related publications. The opportunity exists to encourage increased visitor use focussing on non-consumptive uses of the elk.**

iv. **Parks and Wildlife Branches will actively pursue funding sources to implement an elk interpretive program.**

v. **Parks Branch will develop educational programs for all age groups to encourage awareness and support for elk management. Emphasis will be placed on reaching local and regional residents.**

2. Wildlife Refuge

In order for a high-quality interpretive program to succeed, issues such as user conflicts, public safety and animal distribution have to be addressed. Designating a protected area or refuge for elk would allow viewing and interpretive recreational opportunities to be concentrated in specific zones of the park which would separate user groups and improve public safety. A wildlife refuge would also function as a sanctuary from harvest pressures and an area to which elk would be attracted, thereby decreasing depredation pressures on adjacent agricultural lands.

a. Guidelines

i. **Based on existing recreational facilities, public accessibility, habitat, and distribution of elk, a wildlife refuge throughout the Spirit Sands and in the north block of the park will be established. Hunting would not be permitted within the wildlife refuge. Figure**

4 identifies the boundary of the proposed Epinette Creek Wildlife Refuge.

ii. **Parks and Wildlife Branches will jointly prepare an Order-in-Council to establish a wildlife refuge in Spruce Woods Provincial Park.**

3. Viewing Opportunities

There is a public expectation to be able to see wildlife while visiting a Provincial Park. A variety of management techniques can be employed to enhance elk-viewing opportunities, thereby increasing the probability of people-elk encounters. Management practices for attracting and concentrating elk will be primarily used in areas of the park where hunting is prohibited.

a. Guidelines

i. **A viewing program will be developed for use within the wildlife refuge. The program and any related facility development will be designed to take advantage of seasonal habitat preferences or developed lure crops and other enticements. Appropriate facilities will be developed which, in concert with attractants, will provide quality viewing opportunities in different areas at different times of the year (i.e. Epinette Creek trail system and wildlife fields). Figure 5 conceptually identifies recreational facilities planned for the Epinette Creek Wildlife Refuge.**

ii. **Parks Branch will initiate a year-round system of collecting statistics of visitor use of the backcountry area of the park. This information will assist in development of the elk-viewing program.**

C. The Elk Population

1. Monitoring

A variety of monitoring techniques should be employed to enable managers to annually assess population fluctations, the makeup of the herd and its distribution. Monitoring is necessary if managers are to try to maintain an optimum herd size of 500-600 elk.

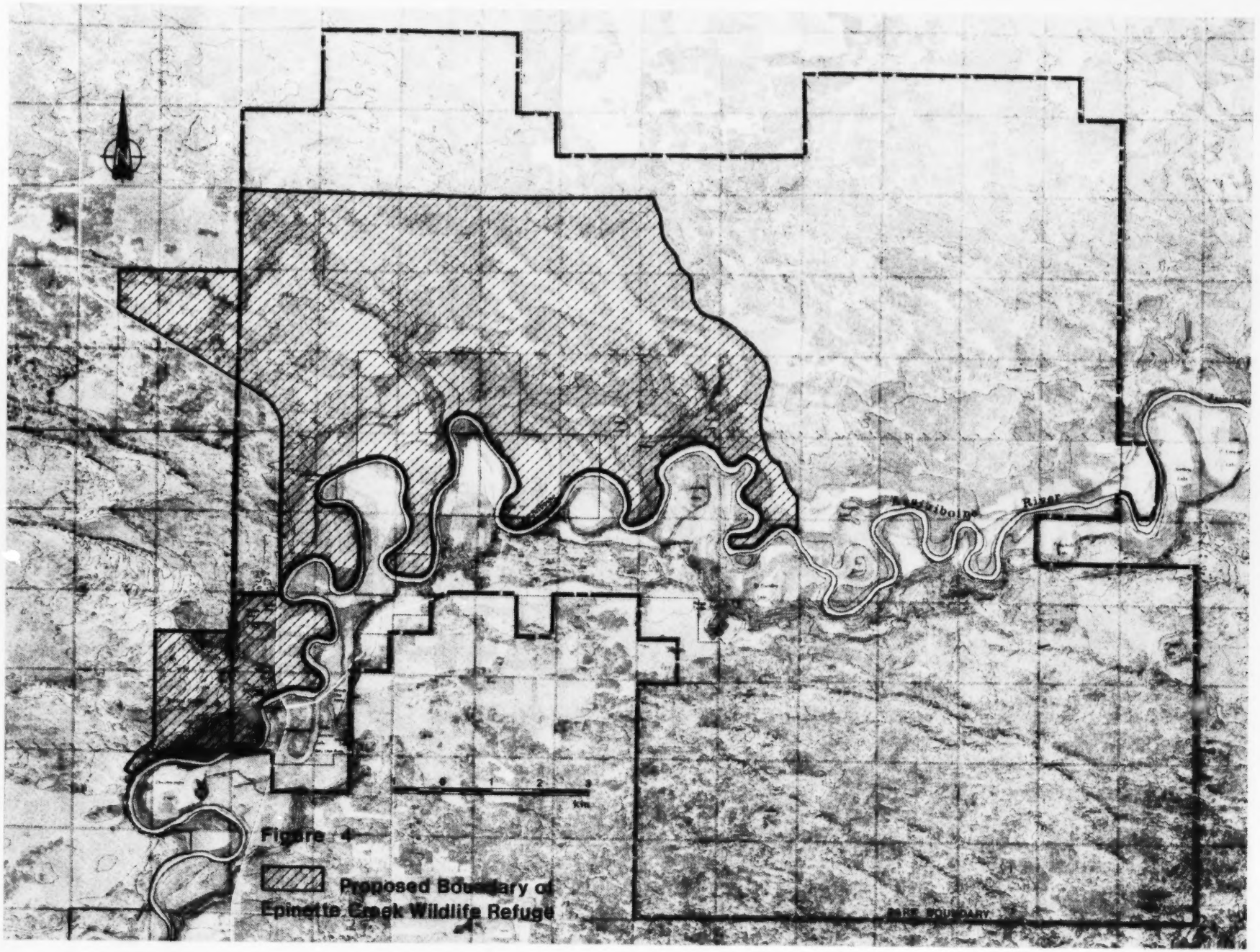


Figure 4

Proposed Boundary of
Epinette Creek Wildlife Refuge

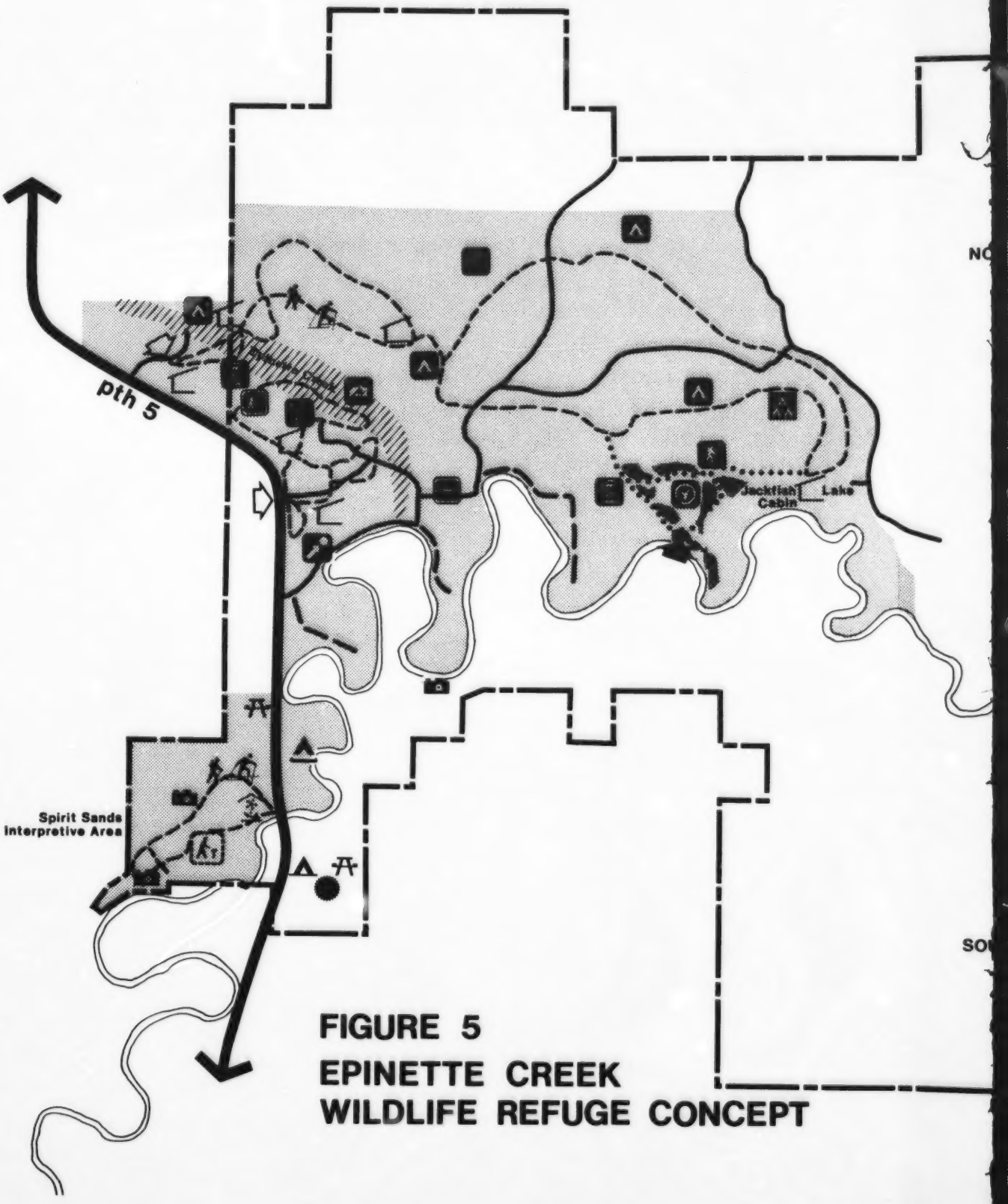
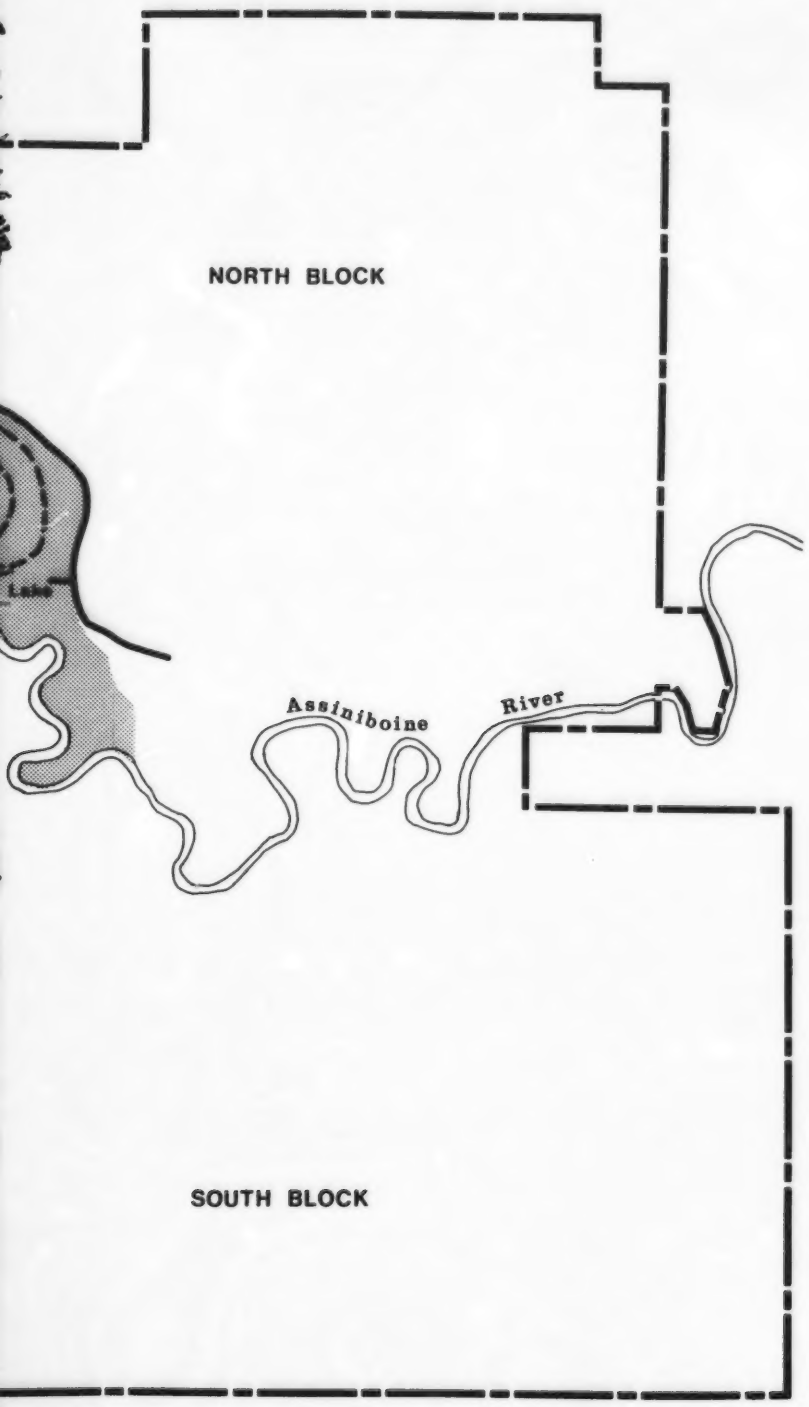


FIGURE 5
EPINETTE CREEK
WILDLIFE REFUGE CONCEPT



LEGEND

Existing	Potential	
		Interpretive Trail
		Visitor Services Centre
		Interpretive Shelter
		Hiking
		Cross-country Skiing
		Mountain Bike Trail
		Cabin
		Day Use
		Campground
		Group Campground
		Canoe-in Campground
		Viewpoint
		Point of Interest
		Auto Tour
		Wildlife Viewing
		Viewing Tower
		Access Point
		Trails
		Wildlife Management Fields
		Public Road
		Market Road
		Epinette Creek Refuge
		Epinette Creek Special Area

N

1 0 1 2 3
km

1988

a. Guidelines

i. At the conclusion of each hunting season, all hunters will be sent a questionnaire to determine their success, hunting effort, kill location and other relevant information. The Wildlife Branch will continue to take the lead role in this regard.

ii. Sex/age classification surveys should be flown annually, preferably in early November. A sample of at least 150 animals should be counted, aged and sexed accordingly to give statistical reliability and confidence in observed sex and age ratios within the herd.

iii. Extensive population surveys should be flown over the Shilo-Spruce Woods area every three years, during midwinter when adequate snow cover is present for optimal viewing. From these surveys, population estimates for the G.H.A. 30 herd will be made.

iv. The annual potential production of calves (annual recruitment) should be assessed by the collection of female reproductive tracts, when seasons are held for female elk.

v. The age composition of the herd will be measured annually through both the aerial classification survey and by Wildlife Branch's jaw collection program. Every effort will be made to secure the lower jaws from elk killed annually in G.H.A. 30, regardless of the cause of mortality.

vi. Herd distribution/dispersion will be monitored annually on a year-round basis by use of observation cards for staff and other volunteers, compensation and damage claims, and casual aerial observations made incidental to scheduled aerial surveys.

2. Habitat

Since both the quantity and quality of habitat in G.H.A. 30 will be a major factor in the ability of the area to support elk, attempts will be made to initiate habitat studies to add to existing data gained through research projects.

a. Guidelines

i. **The Shilo Environmental Advisory Committee will be asked to examine the results of the current fire ecology study and with assistance of Fire Management staff, make recommendations to the Minister and Base Commander.**

ii. **In order to develop an ongoing data base of both the amount of elk habitat remaining in G.H.A. 30 (or in selected portions) and changes in land use, Landsat imagery will be used every five years to map the habitat.**

iii. **A system will be developed to monitor the changes in agricultural practices in the area. A co-operative venture with local Agricultural Representatives will be investigated.**

iv. **Habitat regeneration/rejuvenation on Crown lands, W.M.A.'s and in the park will be explored and implemented when feasible. Tree planting, timber harvesting and controlled burning are three techniques that should be investigated to see if their implementation will have a positive rather than negative impact on the capacity of the area to support elk.**

Concern for land use on undesignated Crown lands will be registered through the Block Planning Committee/Crown Lands Classification Committee (B.P.C./C.L.C.C.) process and local Planning Districts. Any use which will severely impact habitat on Crown or private land should be brought to the attention of the proper authority and efforts made to reduce or minimize the impact on elk habitat.

3. Biological Investigations

Collection of biological data for annual productivity and age characteristics of the population can be gained through jaw and reproductive tract collections. Additionial biological data should be collected to broaden the data base of elk from this area.

a. Guidelines

i. **Efforts will be made to assess calf survival in this area, focussing on the difference between <u>in utero</u> and visual observations of calf/cow ratios.**

ii. **The impact on the population of two disease vectors - the liver fluke (Fascioloides magna) and brain worm (Parelaphostrongylus tenuis) should be investigated in some depth. These two parasites are known to occur in moose and elk but it is unknown what degree of mortality they cause.**

iii. **When check stations are held during sport hunting seasons, all animals received will be weighed and measured using standard morphometric techniques and condition indices will be measured (i.e. kidney fat index). These data will add to the existing file of data of this nature on elk taken in previous sport hunting seasons.**

D. Landowner/Elk Conflict

1. Depredation

The current depredation issue is counterproductive to landowner-Department relations and elk management. The economic losses caused by elk depredation have created a problem which has to be resolved to the mutual satisfaction of the landowners and Provincial Government. Resolution of the depredation situation is key to having the landowners' support for elk management programs.

a. Guidelines

i. **Wildlife Branch will prepare and co-ordinate a depredation strategy to minimize conflicts between landowners and elk. The study completed by Dr. Richard Rounds to determine the nature and extent of depredation problems will provide background information for the strategy. The depredation strategy will be action-oriented with regard to compensation payments, intercept feeding efforts and co-operative field management.**

ii. **The existing wildlife management fields in Spruce Woods Provincial Park will be used for planting experimental forage and speciality crops to contain and modify the distribution of animals.**

iii. **In 1988, the Department of Natural Resources will establish an Elk Management Board, consisting of Wildlife, Parks and Regional Services staff, Treaty Indian band and public representatives. The Board will review landowner concerns, advise the public of elk management projects and be responsible to the Minister of Natural Resources.**

E. Enforcement and Communications

1. Implementation

Implementation of the elk management plan recommendations will be phased over a number of years. Successful implementation will depend upon effective enforcement, public liaison and funding.

Co-operative efforts between the Department of Natural Resources and landowners are essential to creating a positive attitude towards elk. A well-structured enforcement program will also reflect the government's commitment to maintaining a healthy elk population.

a. Guidelines

i. **Parks and Wildlife staff, through the Elk Management Board, as well as during normal job-related functions will regularly meet with local groups such as R.M.'s, landowners, Indian bands, Friends of Spruce Woods, Manitoba Naturalists, and Manitoba Wildlife Federation. Effective liaison is considered extremely important for building public support for elk management programs.**

ii. **A communications strategy, using local media and departmental news releases, will be initiated to increase public awareness of elk management activities. Parks and Wildlife Branches will co-ordinate this effort through the Communications, Economics and Planning Branch.**

iii. **Regional Services staff, in concert with Parks and Wildlife Branch staff, will develop appropriate enforcement strategies to address and complement elk management.**

iv. **The Department of Natural Resources will improve dialogue with Indian Bands using G.H.A. 30 for subsistence hunting. It is important that band members be aware of the data,**

issues, objectives and management priorities being initiated in G.H.A. 30. Their support and participation will be required if management initiatives are to succeed.

v. The proposed Spruce Woods Provincial Park Management Plan will reflect the elk management recommendations contained herein. Where appropriate, management objectives specific to Spruce Woods Provincial Park will be expanded to include implementation priorities. These will be developed jointly with Wildlife Branch.

MANAGEMENT STRATEGY

The management strategy is based upon the Department's mandate to protect and maintain the elk herd and its habitat as well as the needs, desires and interests of different sectors of the public. Elk management actions which will respond to both government and public concerns are listed below. These projects are considered to be important and achievable initial steps in implementing the Elk Management Plan for G.H.A. 30.

A. Implementation Priorities

i. Establish an Elk Management Board (see Guideline iii., Section D.1. under Management Guidelines).

ii. Establish a Wildlife Refuge in Spruce Woods Provincial Park (see Guideline i., Section B.2. under Management Guidelines).

iii. Prepare a Depredation Strategy to alleviate conflicts between the Department, landowners and elk (see Guideline i., Section D.1. under Management Guidelines).

iv. Develop a Communication/Public Review Approach with Indian Bands as a main focus (see Guideline iv., Section E.1. under Management Guidelines).

v. Develop an Interpretative Program for elk in G.H.A. 30 with specific emphasis on Spruce Woods Provincial Park (see Guideline i., Section B.1. under Management Guidelines).

Table 6 builds upon these five actions to identify project priorities for implementing the Elk Management Plan. Wildlife, Parks and Regional Services Branches will be responsible for allocating appropriate staff and monies to complete the identified projects. Resource branches will work co-operatively to develop quality products and to strengthen commitment for pursuing an integrated approach to elk management in G.H.A. 30.

TABLE 6

PRIORITIES FOR ELK MANAGEMENT STRATEGY IN G.H.A. 30

	Priority 1	Priority 2	Priority 3
1. Consumptive Use			
	A) Review hunting seasons on an annual basis	A) Initiate Project Wild on Indian Reserves	
	B) Develop a communications strategy with Indian Bands		
2. Non-consumptive Use			
	A) Establish Wildlife Refuge in Spruce Woods	A) Promote elk herd in Tourism and Parks publications	A) Incorporate elk information in Spruce Woods Study Kit
	B) Develop elk interpretive plan for G.H.A. 30, specifically Spruce Woods Provincial Park	B) Develop viewing program in wildlife refuge	
		C) Initiate system to collect statistics on backcountry users	
3. Elk Population			
	A) Continue montoring elk population on annual basis	A) Initiate habitat enhancement projects	A) Conduct habitat monitoring projects using Landsat imagery
	B) Conduct population survey every 3 years	B) Initiate studies - cow/calf survival and diseases	
		C) Operate check stations during sport hunting seasons	

TABLE 6 (cont'd)

PRIORITIES FOR ELK MANAGEMENT STRATEGY IN G.H.A. 30

Priority 1	Priority 2	Priority 3
4. Depredation		
A) Prepare depredation strategy to minimize conflicts between landowners and elk	A) Plant wildlife fields to forage crops	
B) Establish Elk Management Board		
5. Enforcement and Communications		
A) Develop public programs to build public support/awareness for management projects	A) Develop an information/communications strategy	
B) Co-ordinate enforcement requirements with Regional Services	B) Reflect Elk Management Strategy in Spruce Woods Managment Plan	
C) Improve dialogue with Indian Bands		

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APPENDIX I

PHOTO RECORD

Photographs by:

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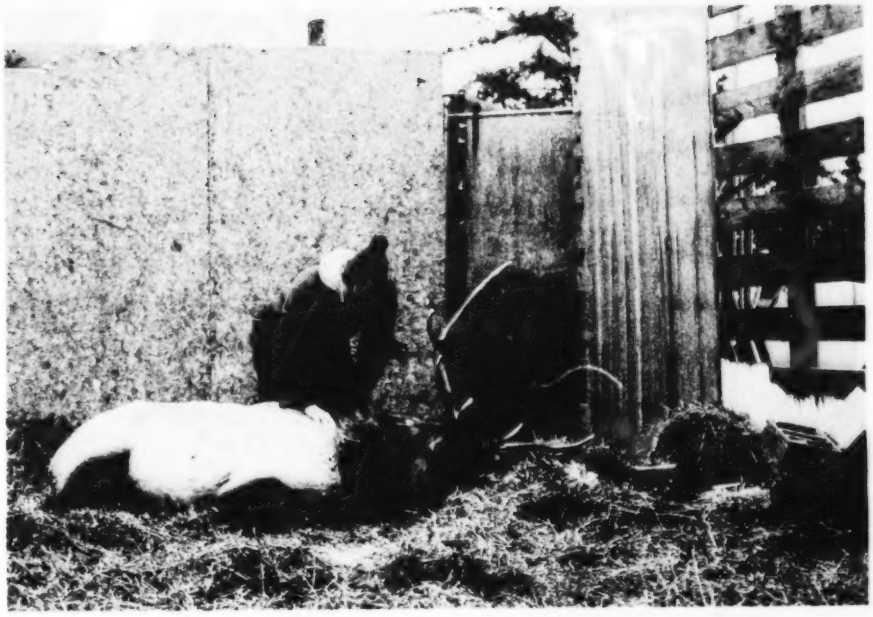
Ken Rebizant
Merlin Shoesmith
William Watkins

TYPICAL ELK RANGE IN G.H.A. 30



RESEARCH CONTRIBUTES VALUABLE KNOWLEDGE ON
ELK MOVEMENTS AND HABITAT REQUIREMENTS

SPRUCE WOODS PRAIRIE - WHITE SPRUCE VEGETATION

RADIO COLLARED ELK IN WHEAT FIELD